Patent claims

1. A method of connecting a rotationally symmetrical part to a hub part by welding, the contact surfaces (4; 5; 14; 15; 24; 25; 34; 35) to be connected to one another being essentially cylindrical and the rotationally symmetrical part having functional surfaces (6; 16; 26; 36), the accurate position and/or angle of which is essential to the function, wherein the rotationally symmetrical part (11; 21; 31) and the hub part (12; 22; 32), in their longitudinal sections containing the rotation axis (0), are dimensioned in such a way that, when the rotationally symmetrical part (11; 21; 31) is shrunk on or pressed on, stresses are produced therein and said stresses produce deformations which are opposed to the stresses to be expected during the subsequent welding and to deformations caused by said stresses.

2. The method as claimed in claim 1, wherein

a) the rotationally symmetrical part (11; 31) is put onto the hub part (12; 32), at least one of the two contact surfaces (14; 15; 34; 35) having different radii along the axial direction (0) in such a way that, when the rotationally symmetrical part (11; 31) is put on, stresses are produced therein which are higher on the one side than on the other side, and the functional surfaces (16; 36) are displaced in one direction (16*; 36*),

b) the weld (20) is then provided on the one side, the functional surfaces (16*; 36*) returning again into the original accurate position (16; 36) due to the welding.

3. The method as claimed in claim 2, wherein one of the surfaces (14, 15; 34, 35) to be connected to one another is cylindrical and only the other has different radii in the axial direction.

4. The method as claimed in claim 3, wherein the smaller radius is on the side of the weld (20) in the case of different radii of the outer surface or the larger radius is on the side of the weld (20) in the case of different radii of the inner surface (15; 35).

5. The method as claimed in claim 3, wherein the other surface of the surfaces (14; 15) to be connected to one another is conical, the smaller radius of the cone being on the side of the weld (20) in the case of a conical outer surface or the larger radius of the cone being on the side of the weld (20) in the case of a conical inner surface (15).

6. The method as claimed in claim 1, wherein

a) the longitudinal section, containing the rotation axis (0), of the rotationally symmetrical part (21), between the contact surface (24) and the functional surface (26), has a constriction (33) which is offset axially (34) relative to the area center (32) of the sectional plane lying outside the constriction (33), so that the functional surface (26) of the rotationally symmetrical

part (21) is displaced in one direction (26*) when being pressed on or shrunk on,

b) the weld (30) is then provided, as a result of which the functional surface (26*) returns again into the original accurate position (26).

7. The method as claimed in claim 1, wherein the resultant (28*) of the forces transmitted via the constriction (33) is offset axially (34) relative to the area center (32) of the sectional plane lying outside the constriction (33).

8. The method as claimed in claim 1, wherein the weld (20; 30) is effected by means of a high-energy beam, in particular a laser beam.